REMARKS

Support for Claim 12 can be found in the specification, e.g., Page 9, lines 31-37.

3) Applicants will amend the specification in due course when allowable subject matter is indicated.

4)-5). The objection to Claims 6 and 7 was not understood these claims are are directed to different classes of subject matter, and therefore do not appear to be duplicative of other claims. These claims were amended for reasons of clarity, however, and such amendment do not change the scope of the claim.

Claim 8 was amended in the Preliminary amendment filed February 15, 2002 to eliminate the multiple dependency. Therefore, it should not have been withdrawn from consideration. It is currently amended to clarify it. These amendments do not change its scope in any way.

6)-8). The polynucleotides and polypeptides of the present invention can be used as reagents for the detection of gene expression. Such expression has been identified in various organs and tissues, including human brain, kidney, blood, lung, colon, lymph nodes, liver and placenta. See, e.g., Specification, Page 15, lines 29-30. Detection can be performed directly on these tissues, as well as on other specimens, including, urine, biopsy tissue, or autopsy material. See, e.g., Specification, Page 12, lines 23-31. Antibodies to the claimed proteins can be used for a variety of purposes, including for detecting expression in normal and disease states, and as a general marker, e.g., in toxicology experiments to determine whether expression is perturbed by a potentially toxic agent.

Most recent published work by Kilk et al. (Neuropeptides. 2004 Oct; 38(5):316-24), indicates that human galanin receptor type 1 (GalR1) mRNA has been used to optimize antisense

efficacy and Kofler et al. demonstrate the expression of neuropeptide galanin and galanin receptors in human skin (J Invest Dermatol. 2004 April; 122(4): 1050-3). Page 8, lines 12-15 of the present specification indicates that PGPCR-3 protein is homologous to human galanin receptor.

PGPCR-3 was subsequently re-named GPR-78, and has a separate entry in the On-line Mendelian inheritance in Man (OMIM). Thus, the scientific community generally recognizes it as a useful gene. See Exhibit A. (The attached BLAST search shows 100% identity to SEQ ID NO:2 and GPR-78).

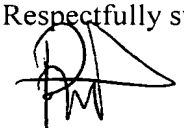
Thus, the Examiner's objections with respect to a lack of utility are not justified.

9). The claims have amended to address the alleged indefiniteness. These amendments do not change the scope of the claims in any way, but merely clarify them.

In view of the above remarks, favorable reconsideration is courteously requested. If there are any remaining issues which could be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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Attorney Docket No.: MERCK-2378

Date: November 29, 2004

*606921
G PROTEIN-COUPLED RECEPTOR 78; GPR78

Links

Gene map locus Chr.4

TEXT

DESCRIPTION

G protein-coupled receptors (GPCRs, or GPRs) contain 7 transmembrane domains and transduce extracellular signals through heterotrimeric G proteins.

CLONING

Lee et al. (2001) identified GPR78 in a genomic database using the sequence of GPR26 (604847) as query. PCR primers were designed to amplify GPR78 from a genomic library, and overlapping fragments of partial sequences were joined to obtain the full-length cDNA. GPR78 encodes a deduced 363-amino acid protein that shares 56% sequence identity with GPR26 in the transmembrane region. Northern blot analysis revealed a 1.1-kb transcript in pituitary, and 1.1- and 4.2-kb transcripts in placenta. No expression was detected in brain, skeletal muscle, lung, heart, liver, pancreas, or kidney.

GENE FUNCTION

Van Laar et al. (2000) determined that GPR78 expression increased in fibroblasts or HeLa cells following UV-A irradiation, exposure to DNA-alkylating agents, or endoplasmic reticulum (ER) stress caused by osmotic shock or the glycosylation inhibitor tunicamycin. The response depended upon the cell line studied. UV-B was a weaker inducer, and UV-C and several other DNA-damaging agents did not induce GPR78 expression. Induction of GPR78 by tunicamycin required activation of multiple ER stress-response elements in the promoter of the GPR78 gene, and induction by a DNA-alkylating agent was independent of the unfolded protein response.

MAPPING

Lee et al. (2001) mapped the GPR78 gene to chromosome 4 based on sequence similarity between the GPR78 sequence and a genomic clone (GenBank AC007104) localized to chromosome 4.

REFERENCES

1. Lee, D. K.; Nguyen, T.; Lynch, K. R.; Cheng, R.; Vanti, W. B.; Arkhitko, O.; Lewis, T.; Evans, J. F.; George, S. R.; O'Dowd, B. F. :
Discovery and mapping of ten novel G protein-coupled receptor genes. *Gene* 275: 83-91, 2001.
PubMed ID : 11574155

2. van Laar, T.; Schouten, T.; Hoogervorst, E.; van Eck, M.; van der Eb, A. J.; Terleth, C. :
The novel MMS-inducible gene Mif1/KIAA0025 is a target of the unfolded protein response pathway. *FEBS Lett.* 469: 123-131, 2000.
PubMed ID : 10708769

CONTRIBUTORS

Patricia A. Hartz - updated : 9/2/2003

CREATION DATE

Patricia A. Hartz : 5/9/2002

EDIT HISTORY

mgross : 9/2/2003
carol : 5/9/2002

1: NM_080819. Reports Homo sapiens G pr...[gi:36951033]

LOCUS NM_080819 1955 bp mRNA linear PRI 23-AUG-2004
DEFINITION Homo sapiens G protein-coupled receptor 78 (GPR78), mRNA.
ACCESSION NM_080819
VERSION NM_080819.2 GI:36951033
KEYWORDS .
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE 1 (bases 1 to 1955)
AUTHORS Clark,H.F., Gurney,A.L., Abaya,E., Baker,K., Baldwin,D., Brush,J., Chen,J., Chow,B., Chui,C., Crowley,C., Currell,B., Deuel,B., Dowd,P., Eaton,D., Foster,J., Grimaldi,C., Gu,Q., Hass,P.E., Heldens,S., Huang,A., Kim,H.S., Klimowski,L., Jin,Y., Johnson,S., Lee,J., Lewis,L., Liao,D., Mark,M., Robbie,E., Sanchez,C., Schoenfeld,J., Seshagiri,S., Simmons,L., Singh,J., Smith,V., Stinson,J., Vagts,A., Vandlen,R., Watanabe,C., Wieand,D., Woods,K., Xie,M.H., Yansura,D., Yi,S., Yu,G., Yuan,J., Zhang,M., Zhang,Z., Goddard,A., Wood,W.I., Godowski,P. and Gray,A.
TITLE The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment
JOURNAL Genome Res. 13 (10), 2265-2270 (2003)
PUBMED 12975309
REFERENCE 2 (bases 1 to 1955)
AUTHORS Lee,D.K., Nguyen,T., Lynch,K.R., Cheng,R., Vanti,W.B., Arkhitko,O., Lewis,T., Evans,J.F., George,S.R. and O'Dowd,B.F.
TITLE Discovery and mapping of ten novel G protein-coupled receptor genes
JOURNAL Gene 275 (1), 83-91 (2001)
PUBMED 11574155
COMMENT VALIDATED REFSEQ: This record has undergone preliminary review of the sequence, but has not yet been subject to final review. The reference sequence was derived from AK128807.1 and BC057778.1.
On Sep 29, 2003 this sequence version replaced gi:18201873.

Summary: G protein-coupled receptors (GPCRs, or GPRs) contain 7 transmembrane domains and transduce extracellular signals through heterotrimeric G proteins.[supplied by OMIM].

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Nov 23 2004 06:38:17

☐ **1:** NP_543009. Reports G protein-coupled...[gi:36951034]

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  ORGANISM  Homo sapiens
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REFERENCE   1  (residues 1 to 363)
  AUTHORS   Clark,H.F., Gurney,A.L., Abaya,E., Baker,K., Baldwin,D., Brush,J.,
            Chen,J., Chow,B., Chui,C., Crowley,C., Currell,B., Deuel,B.,
            Dowd,P., Eaton,D., Foster,J., Grimaldi,C., Gu,Q., Hass,P.E.,
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  TITLE     The secreted protein discovery initiative (SPDI), a large-scale
            effort to identify novel human secreted and transmembrane proteins:
            a bioinformatics assessment
  JOURNAL   Genome Res. 13 (10), 2265-2270 (2003)
   PUBMED   12975309
REFERENCE   2  (residues 1 to 363)
  AUTHORS   Lee,D.K., Nguyen,T., Lynch,K.R., Cheng,R., Vanti,W.B., Arkhitko,O.,
            Lewis,T., Evans,J.F., George,S.R. and O'Dowd,B.F.
  TITLE     Discovery and mapping of ten novel G protein-coupled receptor genes
  JOURNAL   Gene 275 (1), 83-91 (2001)
   PUBMED   11574155
COMMENT     VALIDATED REFSEQ: This record has undergone preliminary review of
            the sequence, but has not yet been subject to final review. The
            reference sequence was derived from AK128807.1 and BC057778.1.
            On Sep 29, 2003 this sequence version replaced gi:18201874.

            Summary: G protein-coupled receptors (GPCRs, or GPRs) contain 7
            transmembrane domains and transduce extracellular signals through
            heterotrimeric G proteins. [supplied by OMIM].
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NCBI **results of BLAST**

BLASTP 2.2.10 [Oct-19-2004]

Reference:
Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer, Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Res. 25:3389-3402.

RID: 1101749500-20677-178263183679.BLASTQ4

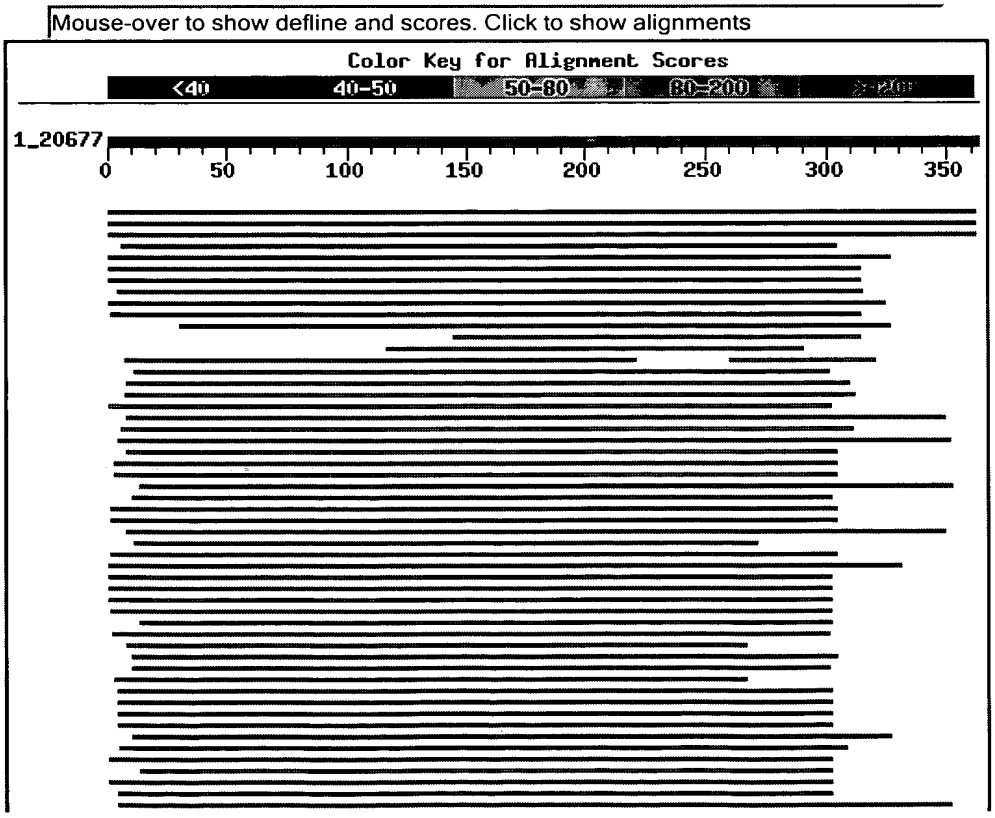
Query=
(363 letters)

Database: All non-redundant GenBank CDS translations+PDB+SwissProt+PIR+PRF excluding environmental samples
2,183,111 sequences; 740,385,392 total letters

If you have any problems or questions with the results of this search please refer to the **BLAST FAQs**

Taxonomy reports

Distribution of 514 Blast Hits on the Query Sequence



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gi|23592220|ref|NP_703143.1| G protein-coupled receptor 26 ...	330	5e-89
gi|20301978|ref|NP_620196.1| G protein-coupled receptor 26 ...	321	2e-86
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gi|40643226|emb|CAC79538.1| serotonin receptor 5-HT4 [Homo ...	81	5e-14	
gi|1518034|gb|AAC60067.1| dopamine D1A1 receptor	81	5e-14	
gi|3962388|emb|CAA06536.1| dopamine D1/beta receptor [Branc...	81	5e-14	
gi|26005719|emb|CAD58392.1| 5-hydroxytryptamine 4 receptor ...	81	5e-14	
gi|50757971|ref|XP_425384.1| PREDICTED: similar to Somatost...	80	6e-14	
gi|6900062|emb|CAB71316.1| 5-HT4 receptor [Homo sapiens]	80	6e-14	
gi|47222737|emb|CAG01704.1| unnamed protein product [Tetrao...	80	6e-14	
gi|6981584|ref|NP_036851.1| somatostatin receptor 1 [Rattus...	80	8e-14	
gi|55640843|ref|XP_522831.1| PREDICTED: somatostatin recept...	80	8e-14	
gi|54696710|gb|AAV38727.1| somatostatin receptor 1 [synthet...	80	8e-14	
gi|6678037|ref|NP_033242.1| somatostatin receptor 1 [Mus mu...	80	8e-14	
gi|6446422|gb|AAF08614.1| somatostatin receptor type 1 subt...	80	8e-14	
gi|4503391|ref|NP_000789.1| dopamine receptor D5 [Homo sapi...	80	1e-13	
gi|2340853|emb|CAA74970.1| D1A3 Dopamine receptor [Cyprinus...	80	1e-13	
gi|89048|pir||A39008 histamine H2 receptor - dog >gi|163952...	79	1e-13	
gi|29570499|gb|AAO91738.1| Dopamine receptor protein 1, iso...	79	1e-13	
gi|29570498|gb|AAO91737.1| Dopamine receptor protein 1, iso...	79	1e-13	
gi|22658483|gb|AAN01276.1| dopamine receptor D5 [Homo sapiens]	79	1e-13	
gi|3941551|gb|AAC82383.1| putative odorant receptor LOR14 [...	79	1e-13	
gi|47228936|emb|CAG09451.1| unnamed protein product [Tetrao...	79	1e-13	
gi|14336736|gb|AAK61266.1| somatostatin receptor type 5 [Ho...	79	2e-13	
gi|4557865|ref|NP_001044.1| somatostatin receptor 5 [Homo s...	79	2e-13	
gi|2119491|pir||I51659 dopamine D1A receptor - African claw...	79	2e-13	
gi|2136182|pir||I57955 somatostatin receptor - human >gi|43...	79	2e-13	
gi|55643121|ref|XP_510725.1| PREDICTED: somatostatin recept...	79	2e-13	
gi|49115095|gb|AAH72912.1| MGC80373 protein [Xenopus laevis]	79	2e-13	
gi|47219262|emb|CAG11724.1| unnamed protein product [Tetrao...	79	2e-13	
gi|49169818|ref|NP_033245.2| somatostatin receptor 4 [Mus m...	79	2e-13	
gi|6754260|ref|NP_034613.1| 5-hydroxytryptamine (serotonin)...	79	2e-13	
gi|6981586|ref|NP_037168.1| somatostatin receptor 4 [Rattus...	79	2e-13	
gi|31204165|ref|XP_311031.1| ENSANGP00000020010 [Anopheles ...	79	2e-13	
gi|31560584|ref|NP_034384.2| galanin receptor 2 [Mus muscul...	79	2e-13	
gi|21654945|gb|AAL23575.1| putative G-protein coupled recep...	79	2e-13	
gi|11225272|ref|NP_062221.1| somatostatin receptor 2 [Rattu...	78	3e-13	
gi|25990354|gb|AAN76495.1| type five somatostatin receptor ...	78	3e-13	
gi|21314570|gb|AAM47010.1| histamine receptor H2 [Mus muscu...	78	3e-13	
gi|12860788|dbj|BAB32044.1| unnamed protein product [Mus mu...	78	3e-13	
gi|55645903|ref|XP_511653.1| PREDICTED: somatostatin recept...	78	4e-13	
gi|9506709|ref|NP_062045.1| galanin receptor 2 [Rattus norv...	78	4e-13	
gi|27806653|ref|NP_776467.1| dopamine receptor D1 [Bos taur...	78	4e-13	
gi|50344544|emb|CAD59057.1| 5-hydroxytryptamine receptor 5A...	78	4e-13	
gi|11878036|gb|AAG40780.1| somatostatin receptor 1 [Sus scr...	78	4e-13	
gi|4503905|ref|NP_003848.1| galanin receptor 2 [Homo sapien...	77	5e-13	
gi|54696714|gb|AAV38729.1| somatostatin receptor 2 [Homo sa...	77	5e-13	
gi|456851|gb|AAB29143.1| D1A dopamine receptor; D1A recepto...	77	5e-13	
gi|543108|pir||JC2083 somatostatin receptor 2 - pig >gi|464...	77	5e-13	
gi|13435405|ref|NP_071640.1| histamine receptor H2 [Homo sa...	77	5e-13	
gi|32493367|gb|AAH54510.1| HRH2 protein [Homo sapiens]	77	5e-13	
gi|55625426|ref|XP_527128.1| PREDICTED: similar to HRH2 pro...	77	5e-13	
gi|3642918|gb|AAC36589.1| galanin receptor type 2 [Mus musc...	77	5e-13	

gi|47086925|ref|NP_998462.1| zgc:85682 [Danio rerio] >gi|46...	77	5e-13	G
gi|6680275|ref|NP_032312.1| histamine receptor H 2 [Mus mus...	77	5e-13	G
gi|50732639|ref|XP_425970.1| PREDICTED: similar to 5-hydrox...	77	5e-13	G
gi|3941547|gb|AAC82381.1| putative odorant receptor LOR3 [L...	77	5e-13	
gi|7229404|gb|AAF42810.1| somatostatin receptor 2B [Homo sa...	77	5e-13	
gi|14550544|gb|AAH09522.1| Unknown (protein for IMAGE:33547...	77	5e-13	G
gi|49902351|gb|AAH74796.1| Orexin receptor 1 [Homo sapiens]...	77	7e-13	G
gi|1518038|gb|AAC60069.1| dopamine D1A2 receptor	77	7e-13	
gi|39597901|emb|CAE68593.1| Hypothetical protein CBG14463 [...	77	7e-13	
gi|2119500|pir||I50475 dopamine D1 receptor - goldfish >gi|...	77	7e-13	
gi|178896|gb|AAA35550.1| beta-3-adrenergic receptor	77	9e-13	G
gi|4557267|ref|NP_000016.1| adrenergic, beta-3-, receptor [...	77	9e-13	G
gi|27685697|ref|XP_220099.1| similar to putative neurotrans...	77	9e-13	G
gi|55646095|ref|XP_523721.1| PREDICTED: similar to galanin ...	77	9e-13	
gi|54696712|gb|AAV38728.1| somatostatin receptor 2 [synthet...	77	9e-13	
gi|4557637|ref|NP_001516.1| orexin receptor 1 [Homo sapiens...	77	9e-13	G
gi|1070629|pir||QRHUB3 beta-3-adrenergic receptor, splice f...	77	9e-13	
gi|1518036|gb|AAC60068.1| dopamine D1C receptor	77	9e-13	
gi|47218969|emb|CAG02007.1| unnamed protein product [Tetrao...	77	9e-13	
gi|2144868|pir||DYRTD1 dopamine receptor D1 - rat	76	1e-12	
gi|34879477|ref|XP_341112.1| 5-hydroxytryptamine receptor [...	76	1e-12	G
gi|50754733|ref|XP_414481.1| PREDICTED: similar to serotoni...	76	1e-12	G
gi|47216965|emb|CAG04907.1| unnamed protein product [Tetrao...	76	1e-12	
gi|908913|gb|AAA70428.1| D1 dopamine receptor protein >gi|1...	76	1e-12	G
gi|20857619|ref|XP_136992.1| PREDICTED: similar to Putative...	76	2e-12	G
gi|6981044|ref|NP_037097.1| histamine receptor H 2 [Rattus ...	76	2e-12	G
gi|13236497|ref|NP_076917.1| 5-hydroxytryptamine (serotonin...	76	2e-12	G
gi|47575845|ref|NP_001001267.1| serotonin 4A receptor (5-HT...	76	2e-12	G
gi|27806153|ref|NP_776892.1| somatostatin receptor 2 [Bos t...	76	2e-12	G
gi|50755087|ref|XP_425206.1| PREDICTED: similar to dopamine...	76	2e-12	G
gi|6425114|gb|AAF08306.1| beta 3 adrenergic receptor [Macac...	76	2e-12	
gi|45439382|gb|AAS18239.2| 5-hydroxytryptamine receptor 4 [...	76	2e-12	G
gi|1362718|pir||A55886 dopamine receptor D1A - chicken	76	2e-12	
gi|924639|gb|AAC52232.1| 5-HT4S receptor >gi|1363262|pir||S...	75	2e-12	G
gi|6981060|ref|NP_036985.1| 5-hydroxytryptamine (serotonin)...	75	2e-12	G
gi|15558894|emb|CAC69545.1| somatostatin receptor subtype 1...	75	2e-12	G
gi|4009515|gb|AAC95468.1| galanin receptor 2 [Mus musculus]	75	3e-12	G
gi|2136496|pir||I47217 dopamine receptor - pig >gi|808098|g...	75	3e-12	
gi|12643864|sp|Q9TT96|B1AR_BOVIN Beta-1 adrenergic receptor...	75	3e-12	
gi|4102061|gb|AAD01420.1| somatostatin receptor type 2 [Mus...	75	3e-12	
gi|33859542|ref|NP_034206.1| dopamine receptor D1A [Mus mus...	75	3e-12	G
gi|48139558|ref|XP_397024.1| similar to allatostatin recept...	75	3e-12	G
gi|4102060|gb|AAD01419.1| somatostatin receptor type 2 [Mus...	75	3e-12	G
gi|47219685|emb|CAG12607.1| unnamed protein product [Tetrao...	75	3e-12	
gi|6678039|ref|NP_033243.1| somatostatin receptor 2 [Mus mu...	74	5e-12	G
gi|55625662|ref|XP_527182.1| PREDICTED: dopamine receptor D...	74	5e-12	G
gi|55742138|ref|NP_001007122.1| 5-hydroxytryptamine (seroto...	74	5e-12	G
gi|6680660|ref|NP_031442.1| adrenergic receptor, alpha 1b [...	74	5e-12	G
gi|1518040|gb|AAC60070.1| dopamine D1B receptor	74	5e-12	
gi|47213581|emb|CAF93484.1| unnamed protein product [Tetrao...	74	5e-12	
gi|3335678|gb|AAC27328.1| D1 dopamine receptor [Macaca mula...	74	5e-12	
gi|30399|emb|CAA41734.1| D-1 dopamine receptor [Homo sapiens]	74	5e-12	G
gi|1362720|pir||C55886 dopamine receptor D1D - chicken	74	5e-12	
gi|49456799|emb|CAG46720.1| DRD1 [Homo sapiens]	74	5e-12	
gi|346640|pir||S28058 serotonin receptor 5 - mouse	74	6e-12	
gi|3283973|gb|AAC25414.1| beta 1 adrenergic receptor [Ovis ...	74	6e-12	
gi|50979252|ref|NP_001003377.1| beta 3 adrenergic receptor ...	74	6e-12	G
gi|50755831|ref|XP_425241.1| PREDICTED: similar to somatost...	74	6e-12	G
gi|28827164|gb|AAO24755.1| melanin-concentrating hormone re...	74	6e-12	
gi|54638423|gb|EAL27825.1| GA21941-PA [Drosophila pseudoobs...	74	6e-12	
gi|7159252|gb|AAF37686.1| octopamine receptor [Aplysia cali...	74	6e-12	

gi|47223437|emb|CAG04298.1| unnamed protein product [Tetrao...	74	6e-12	
gi|2137787|pir||JC4629 somatostatin receptor type-4 - mouse...	74	6e-12	
gi|1913918|gb|AAB51068.1| beta-3 adrenergic receptor [Canis...	74	6e-12	
gi|603869|emb|CAA57494.1| D1-like dopamine receptor [Oreoch...	74	8e-12	
gi|6978775|ref|NP_036678.1| dopamine receptor 1A [Rattus no...	74	8e-12	
gi|55241891|gb|EAA08140.3| ENSANGP00000018804 [Anopheles ga...	74	8e-12	
gi|50950129|ref|NP_001002933.1| hypocretin receptor 2 [Cani...	73	1e-11	
gi|47223876|emb|CAG06053.1| unnamed protein product [Tetrao...	73	1e-11	
gi|47217696|emb|CAG13327.1| unnamed protein product [Tetrao...	73	1e-11	
gi|47214321|emb|CAG11192.1| unnamed protein product [Tetrao...	73	1e-11	
gi|37704009|gb|AAR01326.1| orexin receptor type-1 [Mus musc...	73	1e-11	
gi|31746493|gb|AAP68899.1| somatostatin receptor type five ...	73	1e-11	
gi|23379643|gb|AAM76564.1| adrenergic receptor beta-3 [Pong...	73	1e-11	
gi|46451437|gb|AAS97963.1| type 3 somatostatin receptor [As...	73	1e-11	
gi|55665868|emb|CAH73407.1| solute carrier family 31 (coppe...	72	2e-11	
gi|28839657|gb|AAH47526.1| HTR7 protein [Homo sapiens] >gi|...	72	2e-11	
gi|10880131|ref|NP_062874.1| 5-hydroxytryptamine receptor 7...	72	2e-11	
gi|10880129|ref|NP_062873.1| 5-hydroxytryptamine receptor 7...	72	2e-11	
gi|55634399|ref|XP_521556.1| PREDICTED: similar to 5-hydrox...	72	2e-11	
gi|6981018|ref|NP_037196.1| hypocretin receptor 1 [Rattus n...	72	2e-11	
gi|55664480|emb|CAH69965.1| 5-hydroxytryptamine (serotonin)...	72	2e-11	
gi|18597350|gb|AAL76096.1| somatostatin receptor [Rattus no...	72	2e-11	
gi|227114|prf||1614340A dopamine receptor D1	72	2e-11	
gi|2119497|pir||I51661 dopamine D1C receptor - African claw...	72	2e-11	
gi|4557639|ref|NP_001517.1| orexin receptor 2 [Homo sapiens...	72	2e-11	
gi|6840859|gb|AAF28802.1| octopamine receptor [Aplysia kuro...	72	2e-11	
gi|435817|gb|AAB28595.1| 5-hydroxytryptamine receptor subty...	72	2e-11	
gi|6680329|ref|NP_032341.1| 5-hydroxytryptamine (serotonin)...	72	3e-11	
gi|6981062|ref|NP_037280.1| 5-hydroxytryptamine (serotonin)...	72	3e-11	
gi|55666937|ref|XP_528711.1| PREDICTED: similar to D(1B) do...	72	3e-11	
gi|33329181|gb|AAQ09991.1| mu opioid-like receptor [Rana pi...	72	3e-11	
gi|3941553|gb|AAC82384.1| putative odorant receptor LOR12 [...	72	3e-11	
gi|8885888|gb|AAF80280.1| alpha 1b adrenoceptor [Oryctolagu...	72	3e-11	
gi|402163|gb|AAA42134.1| 5HT-7 serotonin receptor	71	4e-11	
gi|477007|pir||A47519 serotonin receptor 7 - rat >gi|410307...	71	4e-11	
gi|34866769|ref|XP_346803.1| hypothetical protein XP_346802...	71	4e-11	
gi|45387607|ref|NP_991152.1| opiate receptor-like [Danio re...	71	4e-11	
gi|47522982|ref|NP_999250.1| serotonin 5-hydroxytryptamine ...	71	4e-11	
gi|50749576|ref|XP_426518.1| PREDICTED: similar to dopamine...	71	4e-11	
gi|449413|prf||1919247A beta1 adrenergic receptor	71	4e-11	
gi|50110|emb|CAA42966.1| beta-3-adrenergic-receptor [Mus mu...	71	5e-11	
gi|7441613|pir||S71323 alpha-1A adrenergic receptor - Japan...	71	5e-11	
gi|6678041|ref|NP_033244.1| somatostatin receptor 3 [Mus mu...	71	5e-11	
gi|298113|emb|CAA51384.1| beta-3-adrenergic receptor [Mus m...	71	5e-11	
gi|55630516|ref|XP_519708.1| PREDICTED: similar to beta-3-a...	71	5e-11	
gi|32423757|gb|AAF97249.2| mu opioid receptor [Macaca mulatta]	71	5e-11	
gi|7304871|ref|NP_038490.1| adrenergic receptor, beta 3 [Mu...	71	5e-11	
gi|52219136|ref|NP_001004654.1| zgc:103757 [Danio rerio] >g...	71	5e-11	
gi|50747427|ref|XP_420871.1| PREDICTED: similar to alpha 1d...	71	5e-11	
gi|1698952|gb|AAB37322.1| high-affinity lysophosphatidic ac...	71	5e-11	
gi|47213181|emb|CAF95370.1| unnamed protein product [Tetrao...	71	5e-11	
gi|47207357|emb|CAF93600.1| unnamed protein product [Tetrao...	71	5e-11	
gi|1345417|dbj|BAA09921.1| alpha1A-adrenoceptor [Oryzias la...	71	5e-11	
gi|31746495|gb|AAP68900.1| type-three somatostatin receptor...	70	7e-11	
gi|12621102|ref|NP_075227.1| 5-hydroxytryptamine (serotonin...	70	7e-11	
gi|23379641|gb|AAM76563.1| adrenergic receptor beta-3 [Gori...	70	7e-11	
gi|51869673|emb|CAF31499.1| 5-HT receptor 7a [Canis familia...	70	7e-11	
gi|1857149|gb|AAB48396.1| 5-hydroxytryptamine7 receptor iso...	70	7e-11	
gi|2133653|pir||S68780 dopamine D1-like receptor - fruit fl...	70	9e-11	
gi|627342|pir||A55044 beta-4C-adrenergic receptor - turkey ...	70	9e-11	
gi|6978459|ref|NP_036833.1| adrenergic receptor, beta 1 [Ra...	70	9e-11	
gi|34328059|ref|NP_038488.1| adrenergic receptor, alpha 1d ...	70	9e-11	

gi|23171234|gb|AAF55030.2| CG9652-PA [Drosophila melanogast...	70	9e-11
gi|6981020|ref|NP_037206.1| hypocretin receptor 2 [Rattus n...	70	9e-11
gi|6680327|ref|NP_032340.1| 5-hydroxytryptamine (serotonin)...	70	9e-11
gi|45382489|ref|NP_990692.1| Mel-1c melatonin receptor [Gal...	70	9e-11
gi|6978463|ref|NP_037240.1| adrenergic receptor, beta 3 [Ra...	70	1e-10
gi|220671|dbj|BAA00527.1| beta-1 adrenergic receptor [Rattu...	70	1e-10
gi|2134105|pir||I51666 Mel-1c receptor subtype - African cl...	70	1e-10
gi|241216|gb|AAB20702.1| beta 3-adrenergic receptor [Rattus...	70	1e-10
gi|6680666|ref|NP_031445.1| adrenergic receptor, beta 1 [Mu...	70	1e-10
gi|1857131|gb|AAB48390.1| Mel-1c(a) melatonin receptor [Xen...	70	1e-10
gi|32482003|gb|AAP84354.1| somatostatin receptor 3 [Homo sa...	69	1e-10
gi|55586759|ref|XP_524646.1| PREDICTED: similar to hypocret...	69	1e-10
gi|21951818|gb|AAM82355.1| somatostatin receptor type 3 [Ca...	69	1e-10
gi|23379645|gb|AAM76565.1| adrenergic receptor beta-3 [Sagu...	69	1e-10
gi|23379639|gb|AAM76562.1| adrenergic receptor beta-3 [Pan ...	69	1e-10
gi|50747348|ref|XP_426351.1| PREDICTED: similar to dopamine...	69	1e-10
gi|46575616|gb|AAH69171.1| Putative neurotransmitter recept...	69	1e-10
gi|27695547|gb|AAH42068.1| Similar to somatostatin receptor...	69	1e-10
gi|27676606|ref|XP_218415.1| similar to G protein-coupled r...	69	2e-10
gi|51869675|emb|CAF31500.1| 5-HT receptor 7b [Canis familia...	69	2e-10
gi|202764|gb|AAA63478.1| alpha-1B adrenergic receptor	69	2e-10
gi|54637595|gb|EAL26997.1| GA19956-PA [Drosophila pseudoobs...	69	2e-10
gi|6120127|gb|AAF04303.1| beta-1 adrenergic receptor [Felis...	69	2e-10
gi|14718772|gb|AAK71884.1| mu-opioid receptor [Macaca fasci...	69	2e-10
gi|47211074|emb|CAF89689.1| unnamed protein product [Tetrao...	69	2e-10
gi|1888505|gb|AAB53098.1| alpha 1d adrenoceptor [Oryctolagu...	69	2e-10
gi|479128|emb|CAA54451.1| dopamine receptor [Drosophila mel...	69	2e-10
gi|1103944|gb|AAA83015.1| 5-hydroxytryptamine7 receptor >gi...	69	2e-10
gi|55665067|emb|CAH72100.1| RP11-295F4.5 [Homo sapiens]	69	3e-10
gi|28316758|ref|NP_783599.1| G protein-coupled receptor 4 [...	69	3e-10
gi|345733|pir||A45121 alpha-1B adrenergic receptor - human	69	3e-10
gi|109444|pir||A40491 alpha-1-adrenergic receptor - golden ...	69	3e-10
gi|26335986|dbj|BAC31691.1| unnamed protein product [Mus mu...	69	3e-10
gi|4501959|ref|NP_000670.1| alpha-1B-adrenergic receptor [H...	69	3e-10
gi|47575853|ref|NP_058687.2| adrenergic receptor, alpha 1b ...	69	3e-10
gi|13324696|ref|NP_077809.1| adrenergic receptor, alpha 1d ...	69	3e-10
gi|27371132|gb|AAH37002.1| Adra1b protein [Mus musculus]	69	3e-10
gi|34368416|emb|CAE46112.1| alpha-1B adrenergic receptor [S...	69	3e-10
gi|47213375|emb|CAF90994.1| unnamed protein product [Tetrao...	69	3e-10
gi|666891|gb|AAB59485.1| alpha-1B adrenergic receptor >gi|1...	69	3e-10
gi|547221|gb|AAB31164.1| alpha adrenergic receptor subtype ...	69	3e-10
gi|543734|sp|P15823|A1AB_RAT Alpha-1B adrenergic receptor (...	69	3e-10
gi|37723880|gb|AAO03563.1| somatostatin receptor subtype 3 ...	68	3e-10
gi|38112417|gb|AAR11294.1| orexin receptor type-2a [Mus mus...	68	3e-10
gi|38112416|gb|AAR11293.1| orexin receptor type-2b [Mus mus...	68	3e-10
gi|27806037|ref|NP_776833.1| opioid receptor, mu 1 [Bos tau...	68	3e-10
gi|1857135|gb|AAB48392.1| Mel-1c(b) melatonin receptor [Xen...	68	3e-10
gi|3954976|emb|CAA06542.1| dopamine D1x receptor [Myxine gl...	68	3e-10
gi|20139232|sp|Q9MYW9|OPRM_MACMU Mu-type opioid receptor (M...	68	3e-10
gi|7690135|gb|AAB31163.2| alpha adrenergic receptor subtype...	68	4e-10
gi|86790|pir||JH0447 alpha-1A-adrenergic receptor - human >...	68	4e-10
gi|86529|pir||A25896 beta-adrenergic receptor - turkey >gi|...	68	4e-10
gi|4501957|ref|NP_000669.1| alpha-1D-adrenergic receptor [H...	68	4e-10
gi|13027456|ref|NP_076482.1| orphan G protein-coupled recep...	68	4e-10
gi|27446646|gb|AAK74189.1| mu opioid receptor variant MOR-1...	68	4e-10
gi|4588548|gb|AAD26148.1| beta 3 adrenergic receptor; beta3...	68	4e-10
gi|2661769|emb|CAA73841.1| dopamine receptor, D1 [Apis mell...	68	4e-10
gi|11128469|emb|CAC15482.1| dJ366F13.1 (opioid receptor mu ...	67	6e-10
gi|38156309|gb|AAR12887.1| mu opioid receptor variant MOR-1...	67	6e-10

gi|4501961|ref|NP_000671.1|	alpha-1A-adrenergic receptor is...	67	6e-10
gi|50959650|gb|AAH74927.1|	Opioid receptor, mu 1 [Homo sapi...	67	6e-10
gi|37362413|gb|AAQ91331.1|	adrenergic alpha 1A receptor [Ho...	67	6e-10
gi|37729014|gb|AAO03562.1|	somatostatin receptor subtype 4 ...	67	6e-10
gi|7300871|gb|AAF56012.1|	CG6919-PA [Drosophila melanogaste...	67	6e-10
gi|15451761|ref|NP_150647.1|	alpha-1A-adrenergic receptor i...	67	6e-10
gi|15451759|ref|NP_150646.1|	alpha-1A-adrenergic receptor i...	67	6e-10
gi|15451757|ref|NP_150645.1|	alpha-1A-adrenergic receptor i...	67	6e-10
gi|34850746|ref|NP_919242.1|	adrenergic, beta-1-, receptor ...	67	6e-10
gi|48374069|ref|NP_001001538.1|	mu opioid receptor [Sus scr...	67	6e-10
gi|50801488|ref|XP_428541.1|	PREDICTED: similar to beta-4C-...	67	6e-10
gi|50759565|ref|XP_425762.1|	PREDICTED: similar to alpha-1A...	67	6e-10
gi|50737619|ref|XP_426087.1|	PREDICTED: similar to opioid r...	67	6e-10
gi|27446648|gb|AAK74190.1|	mu opioid receptor variant MOR-1...	67	6e-10
gi|27373028|gb|AAN87342.1|	DRG kappa 1 splice variant KOR 1...	67	6e-10
gi|47217452|emb|CAG10221.1|	unnamed protein product [Tetrao...	67	6e-10
gi|607912|gb|AAB60354.1|	mu opioid receptor variant >gi|213...	67	6e-10
gi|666893|gb|AAB59486.1|	alpha-1C-adrenergic receptor	67	6e-10
gi|6114881|emb|CAB59347.1|	alpha-1D adrenergic receptor [Su...	67	6e-10
gi|547222|gb|AAB31165.1|	alpha adrenergic receptor subtype ...	67	6e-10
gi|1362719|pir||B55886	dopamine receptor D1B - chicken	67	6e-10
gi|40362763|gb|AAR84650.1|	alpha 1A adrenoceptor isoform 6 ...	67	6e-10
gi|40362761|gb|AAR84649.1|	alpha 1A adrenoceptor isoform 5b...	67	6e-10
gi|40362757|gb|AAR84647.1|	alpha 1A adrenoceptor isoform 3c...	67	6e-10
gi|40362755|gb|AAR84646.1|	alpha 1A adrenoceptor isoform 3b...	67	6e-10
gi|40362753|gb|AAR84645.1|	alpha 1A adrenoceptor isoform 2c...	67	6e-10
gi|12858052|dbj|BAB31185.1|	unnamed protein product [Mus mu...	67	6e-10
gi|55558|emb|CAA35934.1|	unnamed protein product [Rattus no...	67	7e-10
gi|111409|pir||S12591	beta-1-adrenergic receptor - rat	67	7e-10
gi|111359|pir||A38731	alpha-1A adrenergic receptor - rat >g...	67	7e-10
gi|28460708|ref|NP_783178.1|	trace amine receptor 9 [Rattus...	67	7e-10
gi|2143857|pir||I56517	mu opioid receptor - rat >gi|403574|...	67	7e-10
gi|4505515|ref|NP_000905.1|	opioid receptor, mu 1 [Homo sap...	67	7e-10
gi|32186858|gb|AAP72174.1|	somatostatin receptor 1 [Canis f...	67	7e-10
gi|38016137|ref|NP_937822.1|	G protein-coupled receptor 103...	67	7e-10
gi|12231866|gb|AAG49292.1|	5-hydroxytryptamine 7 receptor [...	67	7e-10
gi|47117904|sp|Q96P65|QRFR_HUMAN	Orexigenic neuropeptide QR...	67	7e-10
gi|27261706|gb|AAN86027.1|	mu-opioid receptor [Cavia porcel...	67	7e-10
gi|404116|dbj|BAA04109.1|	kappa opioid receptor [Rattus nor...	67	1e-09
gi|1083836|pir||A55259	kappa opioid receptor - guinea pig >...	67	1e-09
gi|425189|gb|AAA41496.1|	kappa opioid receptor	67	1e-09
gi|1204095|emb|CAA56457.1|	dopamine receptor [Takifugu rubr...	67	1e-09
gi|34866003|ref|XP_346733.1|	hypothetical protein XP_346732...	67	1e-09
gi|6981310|ref|NP_037203.1|	opioid receptor, mu 1 [Rattus n...	67	1e-09
gi|35187403|gb|AAQ84306.1|	type 7 serotonin receptor [Helis...	67	1e-09
gi|12232632|gb|AAD22540.2|	alpha-1A adrenergic receptor [Ca...	67	1e-09
gi|37625043|gb|AAQ95734.1|	dopamine receptor D4 [Mustela pu...	67	1e-09
gi|47217312|emb|CAG12520.1|	unnamed protein product [Tetrao...	67	1e-09
gi|1657822|gb|AAB93648.1|	beta1 adrenergic receptor [Canis ...	67	1e-09
gi|2143855|pir||I56504	mu opioid receptor - rat >gi|1017732...	67	1e-09
gi|241214|gb|AAB20701.1|	alpha 1-adrenergic receptor subtyp...	66	1e-09
gi|885865|gb|AAA86878.1|	mu opioid recptor	66	1e-09
gi|28212244|ref|NP_783177.1|	trace amine receptor 6 [Rattus...	66	1e-09
gi|39725940|ref|NP_000903.2|	opioid receptor, kappa 1 [Homo...	66	1e-09
gi|37724703|gb|AAO18365.1|	mu opioid receptor variant CII [...	66	1e-09
gi|6754940|ref|NP_035143.1|	opioid receptor, mu 1 [Mus musc...	66	1e-09
gi|4505925|ref|NP_003958.1|	putative neurotransmitter recep...	66	1e-09
gi|565069|gb|AAB60673.1|	mu opioid receptor [Mus musculus] ...	66	1e-09

gi|8778198|gb|AAF79213.1|	mu opioid receptor variant F [Mus...	66	1e-09
gi|18026695|gb|AAL55583.1|	mu opioid receptor variant BII [...	66	1e-09
gi|18026693|gb|AAL55582.1|	mu opioid receptor variant BI [M...	66	1e-09
gi|18026691|gb|AAL55581.1|	mu opioid receptor variant A [Mu...	66	1e-09
gi|5853309|gb|AAD54415.1|	mu opioid receptor variant C; MOR...	66	1e-09
gi|45768619|gb|AAH67468.1|	G protein-coupled receptor 63 [H...	66	1e-09
gi|20379020|gb|AAM21070.1|	opioid receptor kappa [Homo sapi...	66	1e-09
gi|27448127|gb|AAO13794.1|	mu opioid receptor variant R [Mu...	66	1e-09
gi|27448125|gb|AAO13793.1|	mu opioid receptor variant Q [Mu...	66	1e-09
gi|27448123|gb|AAO13792.1|	mu opioid receptor variant P [Mu...	66	1e-09
gi|27446644|gb|AAK74188.1|	mu opioid receptor variant MOR-1...	66	1e-09
gi|1256416|gb|AAA96315.1|	beta3-adrenergic receptor [Cavia ...	66	1e-09
gi|5805153|gb|AAD51861.1|	mu opioid receptor MOR1D [Mus mus...	66	1e-09
gi|3650454|gb|AAC61296.1|	octopamine receptor type 1 [Lymna...	66	1e-09
gi|409029|gb|AAA93114.1|	alpha1C adrenergic receptor	66	1e-09
gi|26332529|dbj|BAC29982.1|	unnamed protein product [Mus mu...	66	1e-09
gi|22832515|gb|AAF48875.2|	CG6857-PA [Drosophila melanogast...	66	2e-09
gi|15004694|gb|AAK77197.1|	adrenergic receptor alpha-1a [Ho...	66	2e-09
gi|47225323|emb|CAG09823.1|	unnamed protein product [Tetrao...	66	2e-09
gi|47213874|emb|CAF94024.1|	unnamed protein product [Tetrao...	66	2e-09
gi|47205254|emb|CAF95660.1|	unnamed protein product [Tetrao...	66	2e-09
gi|47178862|emb|CAG13901.1|	unnamed protein product [Tetrao...	66	2e-09
gi|32165520|gb|AAP72127.1|	G protein-coupled receptor 135 [...	65	2e-09
gi|395368|emb|CAA49352.1|	serotonin receptor [Rattus norveg...	65	2e-09
gi|1002739|gb|AAC50504.1|	GPR10	65	2e-09
gi|55250889|gb|AAH85587.1|	Zgc:103685 [Danio rerio] >gi|559...	65	2e-09
gi|54111955|gb|AAV28689.1|	mu opioid receptor [Taricha gran...	65	2e-09
gi|52698314|gb|AAR36861.1|	melanopsin [Felis catus]	65	2e-09
gi|48101556|ref|XP_392683.1|	similar to CG4322-PA [Apis mel...	65	2e-09
gi|2796173|gb|AAB97525.1|	beta-1 adrenergic receptor [Sus s...	65	2e-09
gi|2398857|dbj|BAA22217.1|	Gq-coupled rhodopsin [Mizuhopect...	65	2e-09
gi|24111248|ref|NP_035141.1|	opioid receptor, kappa 1 [Mus ...	65	3e-09
gi|30231226|ref|NP_840074.1|	opsin 4 (melanopsin) [Danio re...	65	3e-09
gi|51951314|gb|AAU15126.1|	kappa opioid receptor [Taricha g...	65	3e-09
gi|54642851|gb|EAL31595.1|	GA16412-PA [Drosophila pseudoobs...	65	3e-09
gi|47222483|emb|CAG13003.1|	unnamed protein product [Tetrao...	65	3e-09
gi|944892|gb|AAB60369.1|	dopamine D2 receptor >gi|1706283|s...	65	3e-09
gi|478273|pir||JC1525	alpha-1B-adrenergic receptor - rat >g...	65	4e-09
gi|18859151|ref|NP_571782.1|	opioid receptor, mu 1 [Danio r...	65	4e-09
gi|27806213|ref|NP_776923.1|	adrenergic, alpha 1A, receptor...	65	4e-09
gi|50729258|ref|XP_425480.1|	PREDICTED: similar to Somatost...	65	4e-09
gi|47227683|emb|CAG09680.1|	unnamed protein product [Tetrao...	65	4e-09
gi|6563386|emb|CAB62570.1|	alpha-1A adrenergic receptor [Su...	65	4e-09
gi|1438750|gb|AAB36304.1|	beta 1-adrenergic receptor [Ovis ...	65	4e-09
gi|21928413|dbj|BAC05800.1|	seven transmembrane helix recep...	65	4e-09
gi|50749927|ref|XP_426540.1|	PREDICTED: similar to beta-adr...	64	5e-09
gi|45708982|gb|AAH67455.1|	G protein-coupled receptor 45 [H...	64	5e-09
gi|55627426|ref|XP_527507.1|	PREDICTED: similar to Putative...	64	6e-09
gi|20070983|gb|AAH26357.1|	G protein-coupled receptor 62 [H...	64	6e-09
gi|3242941|gb|AAC23861.1|	alpha-1A adrenoreceptor [Canis fa...	64	6e-09
gi|2198745|gb|AAB61334.1|	alpha 1a-adrenoceptor [Oryctolagu...	64	6e-09
gi|8843927|gb|AAF80169.1|	alpha 1a-adrenoceptor isoform 3 [...	64	6e-09
gi|8843925|gb|AAF80168.1|	alpha 1a-adrenoceptor isoform 2 [...	64	6e-09
gi|51765584|ref|XP_487102.1|	PREDICTED: similar to trace am...	64	8e-09
gi|31083315|ref|NP_009158.3|	G protein-coupled receptor 45 ...	64	8e-09
gi|37524029|gb|AAQ92315.1|	relaxin-3 receptor-1 [Homo sapie...	64	8e-09
gi|31542909|ref|NP_444337.2|	G protein-coupled receptor 45 ...	64	8e-09
gi|55624572|ref|XP_526961.1|	PREDICTED: G-protein coupled r...	64	8e-09
gi|55599359|ref|XP_515672.1|	PREDICTED: similar to G protei...	64	8e-09
gi|33859500|ref|NP_033760.1|	adenosine A2a receptor [Mus mu...	64	8e-09

gi|34878896|ref|NP_543141.2|	G protein-coupled receptor 62 ...	64	8e-09
gi|23452342|gb|AAN33001.1|	adenosine-like receptor [Asterin...	64	8e-09
gi|11993046|gb|AAG42572.1|	G protein-coupled receptor PSP24...	64	8e-09
gi|47226910|emb|CAG05802.1|	unnamed protein product [Tetrao...	64	8e-09
gi|2119488|pir||I50081	rhodopsin - green anole >gi|468262|g...	63	1e-08
gi|13540557|ref|NP_110411.1|	G protein-coupled receptor 63 ...	63	1e-08
gi|27683113|ref|XP_237112.1|	similar to G protein-coupled r...	63	1e-08
gi|6753710|ref|NP_034228.1|	opsin (encephalopsin) [Mus musc...	63	1e-08
gi|37497118|ref|NP_922917.1|	dopamine receptor D2 like [Dan...	63	1e-08
gi|41386782|ref|NP_776656.1|	adrenergic, beta-2, receptor, ...	63	1e-08
gi|50742751|ref|XP_419740.1|	PREDICTED: similar to Vascular...	63	1e-08
gi|45768489|gb|AAH67466.1|	G protein-coupled receptor 63 [H...	63	1e-08
gi|7271779|gb|AAF44619.1|	rod-like opsin [Salmo salar]	63	1e-08
gi|6017883|gb|AAF01674.1|	beta 1 adrenergic receptor [Bos t...	63	1e-08
gi|24432089|ref|NP_006047.2|	neuromedin U receptor 1 [Homo ...	63	1e-08
gi|4028154|gb|AAC96118.1|	putative neurotransmitter recepto...	63	1e-08
gi|51765586|ref|XP_487103.1|	PREDICTED: similar to trace am...	62	2e-08
gi|2865470|gb|AAC02680.1|	orphan G protein-coupled receptor...	62	2e-08
gi|30354034|gb|AAH51914.1|	NMUR1 protein [Homo sapiens] >gi...	62	2e-08
gi|33504559|ref|NP_878306.1|	opioid receptor, kappa 1 [Dani...	62	2e-08
gi|45767693|gb|AAH67467.1|	G protein-coupled receptor 63 [H...	62	2e-08
gi|22091559|emb|CAD23111.1|	blue cone opsin [Cottus gobio]	62	2e-08
gi|4455063|gb|AAD21056.1|	orphan G protein-coupled receptor...	62	2e-08
gi|2735351|gb|AAB93884.1|	high-affinity lysophosphatidic ac...	62	2e-08
gi|71928|pir||OOOCG	rhodopsin - giant octopus	62	2e-08
gi|2695874|emb|CAB08107.1|	P2Y-like G-protein coupled recep...	62	2e-08
gi|808876|dbj|BAA06508.1|	kappa-opioid receptor [Mus muscul...	62	2e-08
gi|345542|pir||B45229	opsin, green-sensitive (clone GFgr-2)...	62	2e-08
gi|4885301|ref|NP_005282.1|	G protein-coupled receptor 17 [...	62	2e-08
gi|55742652|ref|NP_999323.1|	5-HT1D receptor [Sus scrofa] >...	62	2e-08
gi|38016150|ref|NP_937842.1|	G protein-coupled receptor 103...	62	2e-08
gi|38016146|ref|NP_937835.1|	G protein-coupled receptor 103...	62	2e-08
gi|18859537|ref|NP_571661.1|	vertebrate ancient long opsin ...	62	2e-08
gi|21307817|gb|AAL25619.1|	orphan G protein-coupled recepto...	62	2e-08
gi|51860765|gb|AAU11506.1|	melanopsin [Phodopus sungorus]	62	2e-08
gi|14041800|dbj|BAB55447.1|	G protein-coupled receptor [Rat...	62	2e-08
gi|47206009|emb|CAF91280.1|	unnamed protein product [Tetrao...	62	2e-08
gi|47205825|emb|CAF95884.1|	unnamed protein product [Tetrao...	62	2e-08
gi|9823|emb|CAA30644.1|	rhodopsin [Octopus dofleini] >gi|12...	62	2e-08
gi|25025009|ref|XP_204521.1|	PREDICTED: similar to trace am...	62	3e-08
gi|21594966|gb|AAH31653.1|	GPR17 protein [Homo sapiens]	62	3e-08
gi|33622376|gb|AAO38857.1|	melanopsin [Rutilus rutilus]	62	3e-08
gi|28212246|ref|NP_783180.1|	trace amine receptor 14 [Rattu...	62	3e-08
gi|50749504|ref|XP_421666.1|	PREDICTED: similar to serotoni...	62	3e-08
gi|1154643|emb|CAA64210.1|	seretonin receptor 1D [Cavia por...	62	3e-08
gi|47215888|emb|CAG12280.1|	unnamed protein product [Tetrao...	62	3e-08
gi|39591067|emb|CAE58847.1|	Hypothetical protein CBG02068 [...	62	3e-08
gi|22477850|gb|AAH36773.1|	Opsin 3 (encephalopsin, panopsin...	61	4e-08
gi|45445826|gb|AAN11677.2|	CG13702-PB [Drosophila melanogas...	61	4e-08
gi|31203627|ref|XP_310762.1|	ENSANGP00000015565 [Anopheles ...	61	4e-08
gi|55620557|ref|XP_526207.1|	PREDICTED: similar to G protei...	61	4e-08
gi|7657071|ref|NP_055137.1|	opsin 3 (encephalopsin, panopsi...	61	4e-08
gi|32483397|ref|NP_000788.2|	dopamine receptor D4 [Homo sap...	61	4e-08
gi|17223726|gb|AAL02125.1|	allatostatin C/drostatin C recep...	61	4e-08
gi|291946|gb|AAB59386.1|	dopamine receptor D4 [Homo sapiens...	61	4e-08
gi|4325156|gb|AAD17289.1|	dopamine receptor D4-2 [synthetic...	61	4e-08
gi|18077928|gb|AAL58637.1|	Dopamine D4 receptor [Homo sapiens]	61	4e-08
gi|21928798|dbj|BAC05985.1|	seven transmembrane helix recep...	61	4e-08
gi|54641635|gb|EAL30385.1|	GA20386-PA [Drosophila pseudoobs...	61	4e-08
gi|47230682|emb|CAF99875.1|	unnamed protein product [Tetrao...	61	4e-08

gi|47229610|emb|CAG06806.1| unnamed protein product [Tetrao...	61	4e-08	
gi|47223619|emb|CAF99228.1| unnamed protein product [Tetrao...	61	4e-08	
gi|47206414|emb|CAF91545.1| unnamed protein product [Tetrao...	61	4e-08	
gi|7296517|gb|AAF51802.1| CG7485-PA [Drosophila melanogaste...	61	5e-08	G
gi|4758474|ref|NP_004239.1| G protein-coupled receptor 10 [...	61	5e-08	G
gi|27714145|ref|XP_232847.1| similar to G protein-coupled r...	61	5e-08	G
gi|29570497|gb|AAO91736.1| Dopamine receptor protein 1, iso...	61	5e-08	
gi|8272568|gb|AAF74260.1| VA opsin [Cyprinus carpio]	61	5e-08	
gi|4028153|gb|AAC96117.1| putative neurotransmitter recepto...	61	5e-08	
gi|47210163|emb|CAF95187.1| unnamed protein product [Tetrao...	61	5e-08	
gi|47210162|emb|CAF95186.1| unnamed protein product [Tetrao...	61	5e-08	
gi|47191525|emb|CAF94841.1| unnamed protein product [Tetrao...	61	5e-08	
gi|85086|pir||JH0170 octopamine receptor type I - fruit fly...	61	5e-08	
gi|103504|pir||S12004 tyramine receptor - fruit fly (Drosop...	61	5e-08	
gi|27685687|ref|XP_220097.1| similar to G protein-coupled r...	60	7e-08	G
gi|55664453|emb|CAH73066.1| G protein-coupled receptor 10 [...	60	7e-08	
gi|38045882|gb|AAR08905.1| nociceptin-like receptor [Rana p...	60	7e-08	
gi|22831755|gb|AAF46059.2| CG3171-PA [Drosophila melanogast...	60	7e-08	G
gi|55627624|ref|XP_527542.1| PREDICTED: opioid receptor, mu...	60	7e-08	
gi|31542912|ref|NP_109658.2| G protein-coupled receptor PSP...	60	7e-08	G
gi|992582|dbj|BAA07741.1| G protein-coupled seven-transmemb...	60	7e-08	
gi|47220968|emb|CAF98197.1| unnamed protein product [Tetrao...	60	7e-08	
gi|11993048|gb|AAG42573.1| G protein-coupled receptor PSP24...	60	7e-08	G
gi|639573|gb|AAB30835.1| alpha 1c-adrenoceptor, alpha 1c-AR...	60	7e-08	
gi|1122223|dbj|BAA06806.1| alpha 1B adrenergic receptor [Ra...	60	7e-08	G
gi|7707679|dbj|BAA95353.1| trehalose receptor 1 [Drosophila...	60	7e-08	

Alignments

Get selected sequences | Select all | Deselect all

☐ >gi|37183331|gb|AAQ89465.1| G GPR78 [Homo sapiens]
gi|36951034|ref|NP_543009.2| G G protein-coupled receptor 78 [Homo sapiens]
gi|47480897|gb|AAH69813.1| G G protein-coupled receptor 78 [Homo sapiens]
gi|47479613|gb|AAH69343.1| G G protein-coupled receptor 78 [Homo sapiens]
gi|34784705|gb|AAH57778.1| G G protein-coupled receptor 78 [Homo sapiens]
gi|46397876|sp|Q96P69|GP78_HUMAN G Probable G protein-coupled receptor GPR78 (UNQ5925/PRO19818
gi|21928620|dbj|BAC05898.1| G seven transmembrane helix receptor [Homo sapiens]
Length = 363

Score = 720 bits (1858), Expect = 0.0
Identities = 363/363 (100%), Positives = 363/363 (100%)

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Query: 1   MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM 60
           MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM
Sbjct: 1   MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM 60

Query: 61  PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120
           PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP
Sbjct: 61  PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120

Query: 121 RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG 180
           RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG
Sbjct: 121 RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG 180

Query: 181 FVLPLAVLCLTSLQVHRVARRHCQRMDTVTMKALALLADLHPSVRQRCLIQQKRRRHRAT 240
           FVLPLAVLCLTSLQVHRVARRHCQRMDTVTMKALALLADLHPSVRQRCLIQQKRRRHRAT
Sbjct: 181 FVLPLAVLCLTSLQVHRVARRHCQRMDTVTMKALALLADLHPSVRQRCLIQQKRRRHRAT 240

Query: 241 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP 300
           RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP
Sbjct: 241 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP 300

Query: 301 FRQVLAGMVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ 360
           FRQVLAGMVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ
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Sbjct: 301 FRQVLAGMVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ 360

Query: 361 QTH 363
           QTH
Sbjct: 361 QTH 363
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>gi|16566319|gb|AAL26479.1| G protein-coupled receptor [Homo sapiens]
Length = 363

```
 Score =  714 bits (1843), Expect = 0.0
 Identities = 360/363 (99%), Positives = 361/363 (99%)

Query: 1   MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM 60
           MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM
Sbjct: 1   MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM 60

Query: 61  PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120
           PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP
Sbjct: 61  PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120

Query: 121 RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG 180
           RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG
Sbjct: 121 RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG 180

Query: 181 FVLPLAVLCLTSLQVHRVARRHCQRMDTVTMKALALLADLHPSVRQRCLIQQKRRRHRAT 240
           FVLPLAVLCLTSLQVHRVARRHCQRMDTVTMKALA+LADLHPSVR  CLIQQKRRRHRAT
Sbjct: 181 FVLPLAVLCLTSLQVHRVARRHCQRMDTVTMKALAVLADLHPSVRHGCLIQQKRRRHRAT 240

Query: 241 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP 300
           RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP
Sbjct: 241 RKIGIAIATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRP 300

Query: 301 FRQVLAGMVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ 360
           FRQVLAGMVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ
Sbjct: 301 FRQVLAGMVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQ 360

Query: 361 QTH 363
           QTH
Sbjct: 361 QTH 363
```

>gi|55622242|ref|XP_526521.1| PREDICTED: similar to G protein-coupled receptor 78 [Pan troglodytes]
Length = 508

```
 Score =  435 bits (1118), Expect = e-120
 Identities = 224/245 (91%), Positives = 227/245 (92%)

Query: 1   MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM 60
           MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM
Sbjct: 1   MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM 60

Query: 61  PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120
           PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP
Sbjct: 61  PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120

Query: 121 RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG 180
           RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG
Sbjct: 121 RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG 180

Query: 181 FVLPLAVLCLTSLQVHRVARRHCQRMDTVTMKALALLADLHPSVRQRCLIQQKRRRHRAT 240
           F LPLAVLCLTSLQVHRVAR HCQRMDTVTMKALALLADLHP        Q + R   A
Sbjct: 181 FALPLAVLCLTSLQVHRVARSHCQRMDTVTMKALALLADLHPRYWPSACRQAQARDLGAP 240

Query: 241 RKIGI 245
             +G+
Sbjct: 241 WAVGL 245
```

```
 Score =  283 bits (725), Expect = 4e-75
 Identities = 148/176 (84%), Positives = 151/176 (85%), Gaps = 7/176 (3%)

Query: 189 CLTSLQVHRVARRHCQRMDTVTMKALALLADLHP-SVRQRCLIQQKRRRHRATRKIGIAI 247
           CL SLQ        C         A+ L   L P SVRQRCLIQQKRRRHRATRKIGIAI
Sbjct: 339 CLPSLQPLGSGPGFCPH------PAIILTTVLCPHSVRQRCLIQQKRRRHRATRKIGIAI 392

Query: 248 ATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRPFRQVLAG 307
           ATFLICFAPYVMTRLAELVPF+T+NAQWGILSKCLTYSKA ADPFTYSLLRRPFRQVLAG
Sbjct: 393 ATFLICFAPYVMTRLAELVPFITLNAQWGILSKCLTYSKAAADPFTYSLLRRPFRQVLAG 452

Query: 308 MVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQQTH 363
           MVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQQTH
Sbjct: 453 MVHRLLKRTPRPASTHDSSLDVAGMVHQLLKRTPRPASTHNGSVDTENDSCLQQTH 508
```

☐ >gi|50747354|ref|XP_426354.1| G PREDICTED: similar to G protein-coupled receptor 26 [Gallus
Length = 416

```
 Score =  347 bits (890), Expect = 3e-94
 Identities = 170/299 (56%), Positives = 222/299 (74%)

Query: 7   LLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDMPFTLLG 66
           LLA LLV+VL V+LLSN LVLLC  YS E+R + +GV LVNLS  +LLL  L+MPFTLLG
Sbjct: 7   LLALLLVLVLVVSLLSNLLVLLCFVYSTEIRKQVAGVFLVNLSFCNLLLTILNMPFTLLG 66

Query: 67  VMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRPRYAGLL 126
           ++R + P     C+ +GFL+TFL SN  LS+AALS D+W+AV FPL Y  ++R + A +L
Sbjct: 67  ILRNQQPLGGCICKAVGFLETFLTSNTMLSMAALSIDKWIAVVFPLSYTSKMRYKDAVIL 126

Query: 127 LGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVGFVLPLA 186
           +G +W  SL F   +L  SW+ Y+S +ASC+L L  E ER RF  FT   H+  F+L L
Sbjct: 127 MGYSWLHSLTFPLVSLFYSWVDYNSVYASCTLHLKEETERRRFTVFTIVFHSTSFMLSLV 186

Query: 187 VLCLTSLQVHRVARRHCQRMDTVTMKALALLADLHPSVRQRCLIQQKRRRHRATRKIGIA 246
           +LC T L+V +VAR HC+R+D +TM+ L LL D+HPSV+QRCL +QKRRR RAT+KI I
Sbjct: 187 ILCFTYLKVLKVARFHCKRIDIITMQTLVLLVDIHPSVKQRCLNEQKRRRQRATKKISIF 246

Query: 247 IATFLICFAPYVMTRLAELVPFVTVNAQWGILSKCLTYSKAVADPFTYSLLRRPFRQVL 305
           I +F+ICF PY++TRL EL+PFVT+N  WGI+SKCLTYSKA +DPF YSLLR+ +++VL
Sbjct: 247 IGSFVICFGPYIITRLIELLPFVTINYYWGIISKCLTYSKAASDPFVYSLLRQQYKKVL 305
```

☐ >gi|23592220|ref|NP_703143.1| G G protein-coupled receptor 26 [Homo sapiens]
gi|22293641|emb|CAD44281.1| G putative orphan G protein-coupled receptor 26 [Homo sapiens]
gi|37537804|sp|Q8NDV2|GP26_HUMAN G Probable G protein-coupled receptor 26
Length = 337

```
 Score =  330 bits (845), Expect = 5e-89
 Identities = 170/327 (51%), Positives = 222/327 (67%), Gaps = 4/327 (1%)

Query: 1   MGPGEALLAGLLVMVLAVALLSNALVLLCCAYSAELRTRASGVLLVNLSLGHLLLAALDM 60
           M   +A LAGLLV  + V+LLSNALVLLC  +SA++R +A  +  +NL+ G+LL   ++M
Sbjct: 1   MNSWDAGLAGLLVGTMGVSLLSNALVLLCLLHSADIRRQAPALFTLNLTCGNLLCTVVNM 60

Query: 61  PFTLLGVMRGRTPSAPGACQVIGFLDTFLASNAALSVAALSADQWLAVGFPLRYAGRLRP 120
           P TL GV+  R P+    C++  FLDTFLA+N+ LS+AALS D+W+AV FPL Y  ++R
Sbjct: 61  PLTLAGVVAQRQPAGDRLCRLAAFLDTFLAANSMLSMAALSIDRWVAVVFPLSYRAKMRL 120

Query: 121 RYAGLLLGCAWGQSLAFSGAALGCSWLGYSSAFASCSLRLPPEPERPRFAAFTATLHAVG 180
           R A L++   W  +L F  AAL  SWLG+   +ASC+L       ER RFA FT   HA+
Sbjct: 121 RDAALMVAYTWLHALTFPAAALALSWLGFHQLYASCTLCSRRPDERLRFAVFTGAFHALS 180
```